

DUNG BEETLES OF BLACKBEARD ISLAND¹ (COLEOPTERA: SCARABAEIDAE)

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ABSTRACT

Nineteen species of dung beetles were captured on Blackbeard Island, Georgia, with feces-baited pit traps. A comparison of the dung beetles captured on the island with beetles captured on the adjacent mainland indicates that the 2 populations are separate and distinct.

THE ISLAND

Dung beetles were collected on Blackbeard Island during the summer of 1970. Blackbeard is a National Wildlife Refuge located off the coast of Georgia in McIntosh County and comprises 2,275 ha. It is bounded on the south and east by the Atlantic Ocean and on the north and west by Sapelo Sound and Sapelo Island. Blackbeard Island consists of a series of long, low, parallel ridges, forested mainly with live oaks, with numerous ponds and savannas between the ridges. Large parts of the island contain virgin stands of slash pine, live oak, cabbage palmetto, holly, and magnolia. Saw palmetto dominates much of the understory in the northern half. On the landward side are extensive salt marshes, and on the ocean side at the south end of the island, the wide sandy beach is backed by a large area of low vegetated dunes.

Blackbeard has an abundance of raccoons and deer but lacks domestic animals, opossums, squirrels, and other wildlife that are common on the adjacent mainland and Sapelo Island. Several species of birds common on the mainland, such as the blue jay and tufted titmouse, are absent on Blackbeard.

THE FAUNA

Ninety-six feces-baited pit traps were placed throughout the island near roadways during the first visit (July 6-9), and 50 traps were placed during the second visit (September 21-24). Swine feces was used as bait, and the traps were emptied and baited twice daily.

The species and number of dung beetles captured are as follows: *Phanaeus igneus* MacLeay (2777), *P. vindex* MacLeay (8), *Canthon chalcites* (Haldeman) (1254), *C. pilularius* (L.) (250), *Deltochilum gibbosum* (Fab.) (335), *Boreocanthon depressipennis* (LeConte) (1081), *Melanocanthon bispinatus* (Robinson) (131), *M. granulifer* (Schmidt) (4), *Ateuchus lecontei* (Har.) (4946), *Onthophagus pennsylvanicus* Har. (4064), *O. hecate* (Panz.) (3853), *O. oklahomensis* Brown (209), *O. tuberculifrons* Sturm (60), *Copris*

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minutus Drury (21), *Geotrupes egeriei* Germar (7), *Aphodius campestris* Blatchley (156), *A. lividus* (Olivier) (44), *Ataenius imbricatus* (Melsheimer) (2), and *A. platensis* (Blanchard) (1).

Ateuchus lecontei was the most common species of dung beetle captured on the island, followed by *O. pennsylvanicus* and *O. hecate*. *Phanaeus igneus* was the most common large species captured, followed by *C. chalcites*.

An interesting color spectrum was observed within the *P. igneus* population. Colors ranged from a "new penny" copper to a dark blue-black color with varying degrees of green between. The 3 color groups were as follows: blue-black made up 68%; green comprised 18%; and copper-green accounted for 14%. Only the copper-green color has been noted within the *P. igneus* population on the adjacent mainland. The blue-black color has been seen on Jekyll Island and St. Simons Island and probably occurs on other Georgia Islands, but none has been captured on the adjacent mainland.

Only 8 specimens of *P. vindex* were captured on Blackbeard, whereas they are abundant on the mainland. In addition, 5 species of dung beetles found on the adjacent mainland were not seen on the island: *Dichotomius carolinus* (Linnaeus), *Copris howdeni* Matthews and Halfpter, *Onthophagus concinnus* Laporte, *Boreocanthon probus* (Germar), and *Ataenius erratus*. However, more trapping needs to be done before stating that these species are absent on the island.

Dung beetles serve as intermediate hosts of certain helminth parasites of domestic and wild animals as well as being beneficial in removing livestock feces from pasture surfaces. A difference in parasite fauna of dung beetles from Blackbeard and the adjacent Mainland was found (manuscript in preparation). The beetles on Blackbeard, with the exception of a single nematode specimen, had a fauna consisting of 2 species of nematodes and 1 species of tapeworm; whereas, the beetles on the mainland had 5 species of nematodes, 1 species of tapeworm, and 1 species of *Acanthocephala*.

The difference in parasite fauna between the 2 populations of dung beetles and the failure to capture 5 species of beetles on the island which were captured on the adjacent mainland indicates that the dung beetle population on Blackbeard is isolated from that of the mainland. This assumption is strengthened by the absence of the blue-black color phase within the *P. igneus* population on the mainland.

Blackbeard Island would be an excellent area for ecological studies on dung beetles, because the beetle population does not appear to be contiguous with other populations.

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